

Certificate of Analysis

Product: Affinity Purified Anti-Serine/Threonine-Protein Kinase ATR [Rabbit]

Code: 600-401-A30

Lot # 19355

Size: 100 µg

Physical State: Liquid (sterile filtered)

Antibody Concentration: 1.28 mg/ml (by UV absorbance at 280 nm)

Buffer: 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2

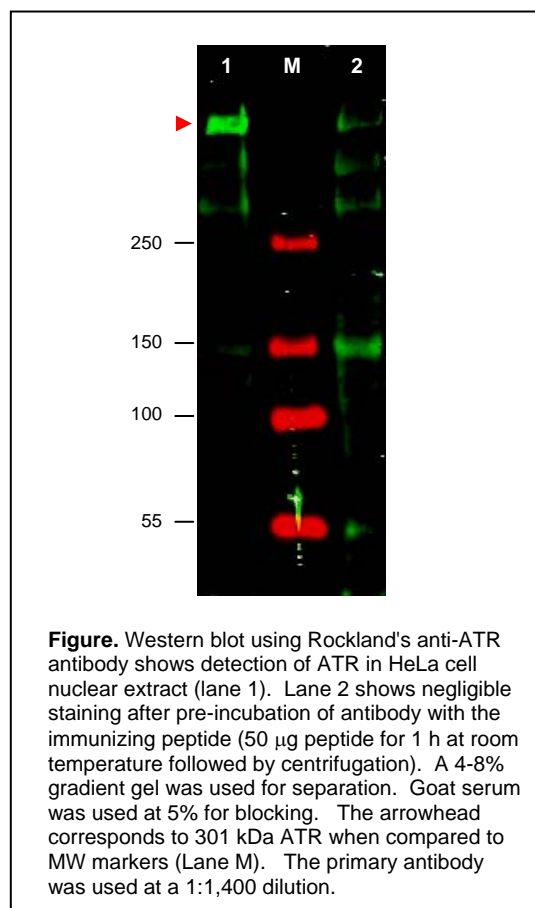
Stabilizer: None

Preservative: 0.01% (w/v) Sodium Azide

Storage Conditions: Store vial at -20° C or below prior to opening. Dilute only prior to immediate use. For extended storage, aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Expiration date is one (1) year from date of opening.

Background Information: Ataxia Telangiectasia Mutated (ATM) and Rad 3-related protein (ATR) is a phosphatidylinositol kinase (PK)-related kinase which functions in response to DNA damage and repair as well as at DNA replication checkpoints during the cell cycle. ATR activates checkpoint signaling upon genotoxic stresses, such as ionizing radiation (IR), ultraviolet light (UV), or DNA replication stalling, thereby acting as a DNA damage sensor. ATR is a member of the DNA-PK kinase family and is closely related to ATM and DNA-PK for which DNA stimulates the observed kinase activity. Chromosomal remodeling proteins have also been reported to associate with ATR complexes, including histone deacetylases (HDAC1, HDAC2 and CHD4). ATR is known to phosphorylate BRCA1, CHEK1, MCM2, RAD17, RPA2, SMC1 and TP53/p53 which collectively inhibit DNA replication and mitosis and promote DNA repair, recombination and apoptosis. ATR is a nuclear protein, but can also be found in PML nuclear bodies in certain cell types. ATR is recruited to chromatin during S-phase and redistributes to discrete nuclear foci upon DNA damage, hypoxia or replication fork stalling.

Application Note(s): This affinity purified antibody has been tested for use in ELISA and western blotting. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 301 kDa in size corresponding to ATR by western blotting in the appropriate cell lysate or extract. Lysates from HeLa, U2OS, RAW264.7 or HEK293 cells are suggested for western blotting. ATR is ubiquitously expressed, with highest expression levels in the testes. Note that isoform 2 is found in pancreas, placenta and liver but not in heart, testis and ovary.



Recommended Dilutions:

| | |
|---------------------------|---------------------|
| ELISA | 1:15,000 - 1:70,000 |
| WESTERN BLOT | 1:1,000 - 1:5,000 |
| IF MICROSCOPY | User Optimized |
| OTHER APPLICATIONS | User Optimized |

Purity and Specificity: This product was affinity purified from monospecific antiserum by immunoaffinity chromatography. This antibody is specific for human ATR protein. A BLAST analysis was used to suggest cross-reactivity with ATR from human, mouse, rat, monkey, dog, fish and *Xenopus* sources based on a 100% homology with the immunizing sequence. Cross-reactivity with ATR from other sources has not been determined.

Immunogen: This affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to an internal region of human ATR protein.

Relevant Links:NCBI [NP_001175](#)Swiss-Prot [Q13535](#)**Related Products:**

| | |
|-------------------------------|--|
| # 611-703-127 | Peroxidase Conjugated Affinity Purified Anti-RABBIT IgG (H&L) (DONKEY) MX10 |
| # 611-132-122 | IRDye® 800 Conjugated Affinity Purified Anti-RABBIT IgG (H&L) (GOAT) MX10 |
| # B501-0500 | BLOTTO (500 g) |
| # BSA-30 | 30% BOVINE SERUM ALBUMIN SOL'N in 0.85% sodium chloride (no preservative or stabilizer) (500 ml) |
| # B304 | NORMAL GOAT SERUM (NGS) (10 ml) |
| # KIA-003 | MaxTag™ Anti-RABBIT IgG Kit for Immunoblotting |
| # MB-070 | Blocking Buffer for Fluorescent Western Blotting |

General References:

Olson, E., Nievera, C.J., Klimovich, V., Fanning, E. and Wu, X. (2006) RPA2 is a direct downstream target for ATR to regulate the S-phase checkpoint. *J. Biol. Chem.* **281** (51), 39517-39533.

Stiff, T., Walker, S.A., Cerosaletti, K., Goodarzi, A.A., Petermann, E., Concannon, P., O'Driscoll, M. and Jeggo, P.A. (2006) ATR-dependent phosphorylation and activation of ATM in response to UV treatment or replication fork stalling. *EMBO J.* **25** (24), 5775-5782.

Bruno, T., De Nicola, F., Iezzi, S., Lecis, D., D'Angelo, C., DiPadova, M., Corbi, N., Dimiziani, L., Zannini, L., Jekimovs, C., Scarsella, M., Porrello, A., Chersi, A., Crescenzi, M., Leonetti, C., Khanna, K.K., Soddu, S., Floridi, A., Passananti, C., Delia, D. and Fanciulli, M. (2006) Che-1 phosphorylation by ATM/ATR and Chk2 kinases activates p53 transcription and the G2/M checkpoint. *Cancer Cell* **10** (6), 473-486.

Dellaire, G., Ching, R.W., Ahmed, K., Jalali, F., Tse, K.C., Bristow, R.G. and Bazett-Jones, D.P. (2006) Promyelocytic leukemia nuclear bodies behave as DNA damage sensors whose response to DNA double-strand breaks is regulated by NBS1 and the kinases ATM, Chk2, and ATR. *J. Cell Biol.* **175** (1), 55-66.

USDA Certification: All products of animal origin manufactured by Rockland Immunochemicals are derived from starting materials of North American origin. Collection was performed in United States Department of Agriculture (USDA) inspected facilities and all materials have been inspected and certified to be free of disease and suitable for exportation.

Note: This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact a technical service representative for more information.